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west virginia department of environmental protection

## G70-C GENERAL PERMIT ENGINEERING EVALUATION

PREVENTION AND CONTROL OF AIR POLLUTION IN REGARD TO THE CONSTRUCTION, MODIFICATION,  
RELOCATION, ADMINISTRATIVE UPDATE AND OPERATION OF NATURAL GAS PRODUCTION FACILITIES  
LOCATED AT THE WELL SITE

APPLICATION NO.: G70-C213

FACILITY ID: 017-00041

☐ CONSTRUCTION  
☒ MODIFICATION  
☐ RELOCATION

☐ CLASS I ADMINISTRATIVE UPDATE  
☐ CLASS II ADMINISTRATIVE UPDATE

### BACKGROUND INFORMATION

Name of Applicant (as registered with the WV Secretary of State's Office):  
EQT Production Company

Federal Employer ID No. (FEIN): 25-0724685

Applicant's Mailing Address: 625 Liberty Avenue, Suite 1700

City: Pittsburgh

State: PA

ZIP Code: 15222

Facility Name: OXF-149 Wellpad

Operating Site Physical Address: Co. Rte 11/4

If none available, list road, city or town and zip of facility.

City: West Union

Zip Code: 26456

County: Doddridge

Latitude & Longitude Coordinates (NAD83, Decimal Degrees to 5 digits):

Latitude: 39.221247

Longitude: -80.800687

SIC Code: 1311

NAICS Code: 211111

Date Application Received:

August 29, 2016

Fee Amount: \$1,500

Date Fee Received: September 20, 2016

Applicant Ad Date: September 2, 2016

Newspaper: *The Doddridge Independent*

Date Application Complete: October 17, 2016

Due Date of Final Action: December 1, 2016

Engineer Assigned: Jerry Williams, P.E.

Description of Permitting Action: Modification to include one (1) new combustor. *This permitting action will supersede and replace R13-3019A issued on January 21, 2014.* This wellpad is currently permitted with nearby wellpad OXF-150. The two (2) pads were previously aggregated together due to a shared tank battery in close proximity. The tank battery has been removed, therefore, the wellpads are no longer considered to be one stationary source. The facilities must be permitted separately.

## PROCESS DESCRIPTION

The following process description was taken from Registration Application G70-C213:

EQT is submitting this application to permit the installation and operation of one (1) enclosed combustor (C003) at the wellpad.

The OXF-150 wellpad consists of six (6) wells, each with the same basic operation. The incoming gas/liquid stream from the underground well will pass through a sand separator, where sand, water, and residual solids are displaced and transferred to the sand separator tank (S032). The gas stream will then pass through a line heater (S019, S021-S024) to raise/maintain temperature of the stream and prevent hydrate formation. The stream will then pass through a high pressure (3 phase) separator, which will separate gas (natural gas from the separator is sent to the sales line) from liquids (condensate and produced water). The liquids are then transferred to the produced fluids tanks (S001-S006).

Emissions from the storage vessels are controlled by enclosed combustors (C001, C003). Once the tanks are filled, the contents are loaded into trucks for transport (S037). EQT utilizes vapor balancing in the truck loading operations, which means the vapors displaced by the filling of tanker trucks are routed back into the battery of tanks and ultimately to the combustor. Facility electricity is provided by thermoelectric generators (S028-S029).

## SITE INSPECTION

Site Inspection Date: 12/9/2013

Site Inspection Conducted By: James Robertson, P.E.

Results of Site Inspection: In compliance

Did Applicant meet Siting Requirements? Yes

If applicable, was siting criteria waiver submitted? NA

Directions to Facility: From Charleston take I-77 north to exit 176. Go east on US Route 50 approximately 40.6 miles. Take a right on Arnolds Creek Road (Co. Rt. 11). Go approximately 0.7 miles and turn left on Punkin Center Road (Co. Rt. 11/4) (Note google maps calls this "Left Fork Run Rd" but signage says "Punkin Center Road"). Continue for approximately 3.3 miles (road turns to dirt after 3.1 miles) and veer left to an access gate. After going through gate go 0.4 miles on the access road. At that point, the road turns hard to the left with a split going up a steep hill on the right. Take the steep hill and go approximately 0.3 miles to the wellpad.

## ESTIMATE OF EMISSIONS BY REVIEWING ENGINEER

The following table indicates which methodology was used in the emissions determination:

| Emission Unit ID# | Process Equipment                                  | Calculation Methodology (e.g. ProMax, GlyCalc, mfg. data, AP-42, etc.) |
|-------------------|--|--|
| C003              | Tank and Liquid Loading Combustor (11.66 MMBTU/hr) | ProMax, AP-42  |

The total facility PTE for the facility (including fugitive emissions) is shown in the following table:

| Pollutant                  | Facility Wide PTE (tons/year) |
|----------------------------|-------------------------------|
| Nitrogen Oxides            | 12.96                         |
| Carbon Monoxide            | 10.88                         |
| Volatile Organic Compounds | 36.43                         |
| Particulate Matter-10/2.5  | 2.53                          |
| Sulfur Dioxide             | 0.08                          |
| Total HAPs                 | 1.42                          |
| Carbon Dioxide Equivalent  | 15,907                        |

Maximum detailed controlled point source emissions were calculated by the applicant and checked for accuracy by the writer and are summarized in the table on the next page.

| Emission Point ID# | Source                      | NO <sub>x</sub> |          | CO    |          | VOC   |          | PM-10 |          | SO <sub>2</sub> |          | Total HAPs |          | CO <sub>2</sub> e ton/year |
|--------------------|-----------------------------|-----------------|----------|-------|----------|-------|----------|-------|----------|-----------------|----------|------------|----------|----------------------------|
|                    |                             | lb/hr           | ton/year | lb/hr | ton/year | lb/hr | ton/year | lb/hr | ton/year | lb/hr           | ton/year | lb/hr      | ton/year |                            |
| C001               | Combustor (Tanks/Loading)   | 1.15            | 5.03     | 0.96  | 4.22     | 1.85  | 4.93     | 0.09  | 0.38     | 0.01            | 0.03     | 0.08       | 0.23     | 6035                       |
| C003               | Combustor (Tanks/Loading)   | 1.15            | 5.03     | 0.96  | 4.22     | 1.85  | 4.93     | 0.09  | 0.38     | 0.01            | 0.03     | 0.08       | 0.23     | 6035                       |
| E019, E021-E024    | 5 Line Heaters              | 0.67            | 2.88     | 0.54  | 2.43     | 0.05  | 0.18     | 0.05  | 0.22     | <0.01           | <0.01    | 0.01       | 0.05     | 3551                       |
| E028, E029         | 2 Thermoelectric Generators | <0.01           | 0.01     | <0.01 | 0.01     | <0.01 | <0.01    | <0.01 | <0.01    | <0.01           | <0.01    | <0.01      | <0.01    | 13                         |
| E032               | Sand Separator Storage Tank | 0               | 0        | 0     | 0        | 0.07  | 0.32     | 0     | 0        | 0               | 0        | <0.01      | 0.01     | 2                          |
| E036               | Uncaptured Liquid Loading   | 0               | 0        | 0     | 0        | 32.82 | 8.53     | 0     | 0        | 0               | 0        | 1.33       | 0.35     | 0                          |
|                    |                             |                 |          |       |          |       |          |       |          |                 |          |            |          |                            |
| Total Point Source |                             | 2.96            | 12.96    | 2.49  | 10.88    | 36.64 | 18.90    | 0.23  | 0.98     | 0.02            | 0.08     | 1.51       | 0.87     | 15636                      |
|                    |                             |                 |          |       |          |       |          |       |          |                 |          |            |          |                            |
| Fugitive HR        | Fugitive Venting            | 0               | 0        | 0     | 0        | NA    | 17.53    | 0     | 0        | 0               | 0        | NA         | 0.55     | 271                        |
|                    | Haulroad Emissions          | 0               | 0        | 0     | 0        | 0     | 0        | NA    | 1.55     | 0               | 0        | 0          | 0        | 0                          |
|                    |                             |                 |          |       |          |       |          |       |          |                 |          |            |          |                            |
| Total Fugitive     |                             | 0.00            | 0.00     | 0.00  | 0.00     | 0.00  | 17.53    | 0.00  | 1.55     | 0.00            | 0.00     | 0.00       | 0.55     | 271                        |
|                    |                             |                 |          |       |          |       |          |       |          |                 |          |            |          |                            |
| Total Sitewide     |                             | 2.96            | 12.96    | 2.49  | 10.88    | 36.64 | 36.43    | 0.23  | 2.53     | 0.02            | 0.08     | 1.51       | 1.42     | 15907                      |

The total facility PTE for the facility (excluding fugitive emissions for VOC and PM) is shown in the following table: The fugitive emissions of a stationary source shall not be considered in determining whether it is a major stationary source for the purposes of 45CSR30-2.26.b or for eligibility of this General Permit:

| Pollutant                  | G70-C Annual Emission Limits (tons/year) | Facility Wide PTE (tons/year) |
|----------------------------|--|-------------------------------|
| Nitrogen Oxides            | 50                                       | 12.96                         |
| Carbon Monoxide            | 80                                       | 10.88                         |
| Volatile Organic Compounds | 80                                       | 18.90                         |
| Particulate Matter-10/2.5  | 20                                       | 0.98                          |
| Sulfur Dioxide             | 20                                       | 0.08                          |
| Total HAPs                 | 20                                       | 0.87                          |

## REGULATORY APPLICABILITY

The following rules apply to this modification:

### **45CSR6 (To Prevent and Control Air Pollution from the Combustion of Refuse)**

45CSR6 prohibits open burning, establishes emission limitations for particulate matter, and establishes opacity requirements. Sources subject to 45CSR6 include completion combustion devices, enclosed combustion devices, and flares.

The facility-wide requirements of the general permit include the open burning limitations §§45-6-3.1 and 3.2.

All completion combustion devices, enclosed combustion devices, and flares are subject to the particulate matter weight emission standard set forth in §45-6-4.1; the opacity requirements in §§45-6-4-3 and 4-4; the visible emission standard in §45-6-4.5; the odor standard in §45-6-4.6; and, the testing standard in §§45-6-7.1 and 7.2.

Enclosed combustion control devices and flares that are used to comply with emission standards of NSPS, Subpart OOOO are subject to design, operational, performance, recordkeeping and reporting requirements of the NSPS regulation that meet or exceed the requirements of 45CSR6.

| <b>Emission Unit ID#</b> | <b>Maximum Design Heat Input (MDHI) (MMBTU/hr)</b> | <b>Subject to Weight Emission Standard?</b> | <b>Control Efficiency Claimed by Registrant</b> | <b>Provide Justification how 45CSR6 is met.</b>  |
|--------------------------|--|---|---|--|
| C003                     | 11.66  | Yes   | 98 %  | The combustor has minimal particulate matter emissions. Therefore, the combustor should demonstrate compliance with this section. The facility will demonstrate compliance by maintaining records of the amount of natural gas consumed by the combustor and the hours of operation. The facility will also monitor the flame of the combustor and record any malfunctions that may cause no flame to be present during operation. |

### **45CSR13 (Permits for Construction, Modification, Relocation and Operation of Stationary Sources of Air Pollutants, Notification Requirements, Administrative Updates, Temporary Permits, General Permits, and Procedures for Evaluation)**

45CSR13 applies to this source due to the fact that the applicant is defined as a “stationary source” under 45CSR13 Section 2.24.b. *Stationary source* means, for the purpose of this rule, any building, structure, facility, installation, or emission unit or combination thereof, excluding any emission unit which meets or falls below the criteria delineated in Table 45-13B which: (a) is subject to any substantive requirement of an emission control rule promulgated by the Secretary; (b) discharges or has the potential to discharge more than six (6) pounds per hour and ten (10) tons per year, or has the potential to discharge more than 144 pounds per calendar day, of any regulated air pollutant; (c) discharges or has the potential to discharge more than two (2) pounds per hour or five (5) tons per year of hazardous air pollutants considered on an aggregated basis; (d) discharges or has the potential to discharge any air pollutant(s) listed in Table 45-13A in the amounts shown in Table 45-13A or greater; or, (e) an

owner or operator voluntarily chooses to be subject to a construction or modification permit pursuant to this rule, even though not otherwise required to do so. 45CSR13 has an original effective date of June 1, 1974.

The applicant meets the definition of a stationary source because (check all that apply):

- ☒ Subject to a substantive requirement of an emission control rule promulgated by the Secretary.
- ☐ Discharges or has the potential to discharge more than six (6) pounds per hour and ten (10) tons per year, or has the potential to discharge more than 144 pounds per calendar day, of any regulated air pollutant.
- ☐ Discharges or has the potential to discharge more than two (2) pounds per hour or five (5) tons per year of hazardous air pollutants considered on an aggregated basis.
- ☐ Discharges or has the potential to discharge any air pollutant(s) listed in Table 45-13A in the amounts shown in Table 45-13A or greater.
- ☐ Voluntarily chooses to be subject to a construction or modification permit pursuant to this rule, even though not otherwise required to do so.

General Permit G70-C Registration satisfies the construction, modification, relocation and operating permit requirements of 45CSR13. General Permit G70-C sets forth reasonable conditions that enable eligible registrants to establish enforceable permit limits.

Section 5 of 45CSR13 provides the permit application and reporting requirements for construction of and modifications to stationary sources. No person shall cause, suffer, allow or permit the construction, modification, relocation and operation of any stationary source to be commenced without notifying the Secretary of such intent and obtaining a permit to construct, modify, relocate and operate the stationary source as required in the rule or any other applicable rule promulgated by the Secretary.

If applicable, the applicant meets the following (check all that apply):

- ☐ Relocation
- ☒ Modification
- ☐ Class I Administrative Update (45CSR13 Section 4.2.a)
- ☐ Class II Administrative Update (45CSR13 Section 4.2.b)

#### **45CSR22 (Air Quality Management Fee Program)**

45CSR22 is the program to collect fees for certificates to operate and for permits to construct or modify sources of air pollution. 45CSR22 applies to all registrants. The general permit fee of \$500 is defined in 45CSR13. In addition to the application fee, all applicants subject to NSPS requirements or NESHAP requirements shall pay additional fees of \$1,000 and \$2,500, respectively.

Registrants are also required to obtain and have in effect a valid certificate to operate in accordance with 45CSR22 §4.1. The fee group for General Permit G70-C is 9M (all other sources) with an annual operating fee of \$200.

#### **40CFR60, Subpart OOOO (Standards of Performance for Crude Oil and Natural Gas Production, Transmission and Distribution)**

EPA published its New Source Performance Standards (NSPS) and air toxics rules for the oil and gas sector on August 16, 2012. EPA published amendments to the Subpart on September 23, 2013 and June 3, 2016.

40CFR60 Subpart OOOO establishes emission standards and compliance schedules for the control of volatile organic compounds (VOC) and sulfur dioxide (SO<sub>2</sub>) emissions from affected facilities that commence construction, modification or reconstruction after August 23, 2011 and on or before September 18, 2015.

*There were no changes from previous regulatory analysis.*

## SOURCE AGGREGATION DETERMINATION

"Building, structure, facility, or installation" is defined as all the pollutant emitting activities which belong to the same industrial grouping, are located on one or more contiguous and adjacent properties, and are under the control of the same person.

Are there surrounding wells or compressor stations under "common control" of the applicant?

☒ Yes ☐ No

Are the properties in question located on "contiguous or adjacent" properties?

☐ Yes ☒ No

Are there surrounding facilities that share the same two (2) digit SIC code?

☒ Yes ☐ No

### ***Final Source Aggregation Decision.***

☒ Source not aggregated with any other source.

☐ Source aggregated with another source. List Company/Facility Name:

## RECOMMENDATION TO DIRECTOR

The information provided in the permit application, including all supplemental information received, indicates the applicant meets all the requirements of applicable regulations and the applicant has shown they meet the eligibility requirements of General Permit G70-C. Therefore, impact on the surrounding area should be minimized and it is recommended that the facility should be granted registration under General Permit G70-C.

Permit Engineer Signature: 

Name and Title: Jerry Williams, Engineer

Date: November 16, 2016